

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in view of the present amendment and in light of the following discussion, is respectfully requested.

Claims 1-5 and 7 are pending in the application. Claims 1-5 and 7 are amended; and Claim 6 is canceled by the present amendment. Support for amended Claims 1-5 and 7 can be found in the original specification, claims and drawings. No new matter is presented.¹

In the outstanding Official Action, the specification was objected to as failing to comply with 35 U.S.C. § 112, first paragraph; Claims 1-7 were objected to because of minor informalities; Claims 1-7 were rejected under 35 U.S.C. 112, second paragraph; and Claims 1-7 were rejected under 35 U.S.C. § 102(e) as being anticipated by Luby et al. (U.S. Patent Application No. 2002/0129159, herein "Luby").

The outstanding Official Action objected to the disclosure under 35 U.S.C. § 112, first paragraph, as including "typographical errors and terms which are not clear, concise and exact." In response, the portions of the specification noted in the outstanding Official Action, as well as additional portions of the specification and Abstract are amended to be clarify the disclosed subject matter. Should a subsequent official communication maintain this objection, Applicant respectfully requests that such a rejection specifically cite the portions of the specification including objectionable language.

Accordingly, Applicant respectfully requests that the objection to the specification, in view of 35 U.S.C. § 112, first paragraph, be withdrawn.

Claims 1-7 were objected to under 35 U.S.C. § 112, second paragraph; as being "narrative and indefinite," and, in some cases, lacking antecedent basis for terms recited therein. In response, Claims 1-5 and 7 are amended to conform to U.S. practice and correct

¹ e.g., specification, Figs. 2-5 and pp. 5-7.

any typographical and grammatical errors therein. As noted above, support for amended Claims 1-5 and 7 can be found in the original specification, claims and drawings.

Accordingly, Applicant respectfully requests that the objection to Claims 1-5 and 7, and rejection of these Claims under 35 U.S.C. § 112, second paragraph; be withdrawn.

In response to the rejection based on Luby, Applicant respectfully submits that amended independent Claims 1, 4, 5 and 7 recite novel features clearly not taught or rendered obvious by the applied references.

The present invention relates to a data sending/receiving system for responding to Denial of Service (DoS) attacks launched on a receiving device. A DoS occurs when an interfering apparatus (4) intercepts valid packets of data sent from an authorized sending apparatus (2) to a receiving apparatus (3), copies or modifies these packets of data, and then sends mass amounts of unauthorized traffic to the receiving apparatus to impair this device's ability to process authorized packets of received data.

As discussed at p. 1 of the specification, prior systems attempted to correct this problem by attaching identification information to every single packet of data sent from the authorized transmitting device to the receiver. However, such a system generates a great deal of processing overhead in the receiver by forcing it to process the identifier for every received packet, before processing the authorized data.

In order to correct this shortcoming, the present inventor developed a system that allows the receiver to request that the authorized sending apparatus attach identification information to each transmitted packet only when a DoS attack is detected. Thus, when the receiver does not detect a DoS attack, the authorized sending devices send packet data free of any identification information relieving the receiver from processing such data. However, when the receiving apparatus detects a DoS attack, a message is transmitted from the receiver to the sender requesting that the authorized sender attach identification to each packet of data

transmitted to the receiver. Therefore, when the receiver is under a DoS attack, only packet data from authorized senders is processed and all other received data is discarded. Such a system allows for more efficient operations of the receiver in normal operations, while still allowing the receiver to request DoS protection, when necessary.

Specifically, amended independent Claim 1 recites, *inter alia*, a sending apparatus comprising:

means for sequentially sending packet data generated based on a predetermined communication protocol via a network;
means for *receiving a request from a receiver device to add identification information to said sent packet data only during a predetermined period*; and
means for adding said requested identification information to said sent packet data, said identification information uniquely identifying each packet of data sent from said sending apparatus.

Amended independent Claims 4, 5 and 7, while directed to alternative embodiments, recite similar step of sending a request to add identification information. Accordingly, the arguments presented below apply to each of independent Claims 1, 4, 5 and 7.

Turning to the applied reference, Luby describes a server (e.g., “hydra server”) used for simultaneous multicast or unicast transmissions of content data to clients. As discussed at ¶ [0056], a “hydra” client (160) may receive content via one or more unicast connections, one or more multicast connections, or a combination thereof.

Luby, however, fails to teach or suggest that the hydra server is capable of sending a request to a sending device to add additional information to sent packet data only during a predetermined period to prevent DoS attacks, as discussed above.

In addressing the “means for adding identification information” recited in original Claim 1, the outstanding Official Action cites ¶ [0216] of Luby. This cited portion of Luby describes a “download id” of the client which is a 64-bit value constructed based on the client

IP address and a 32-bit random number. This download id indicates that the client is initiating a transfer (e.g., download) from the server. However, this identifier is not added to “each packet of data sent from the sending apparatus,” nor is it added to any data in response to a request received from a server device, as recited in amended independent Claim 1.

Additionally, at no point does Luby teach or suggest that his device includes provisions to request that identification information be added to received data, at a sending device, to prevent a DoS attack whatsoever.

Therefore, this cited portion of Luby fails to teach or suggest *receiving a request from a receiver device to add identification information to said sent packet data only during a predetermined period*, as recited in amended independent Claims 1 and 4.

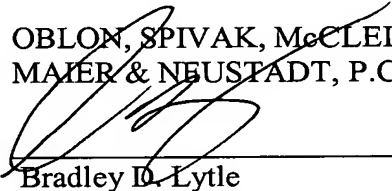
Similarly, Luby fails to teach or suggest requesting, from the receiving device, *that one or a plurality of authorized sending devices at said sending side add identification information to sent packet data*, as recited in independent Claims 5 and 7.

Accordingly, Applicant respectfully requests that the rejection of independent Claims 1, 4, 5 and 7 (and the claims that depend therefrom) under 35 U.S.C. § 102(e) be withdrawn.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-5 and 7 is definite and patentably distinguishing over the applied references. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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